

REMARKS

Reconsideration and further examination of this application is respectfully requested. The Office Action mailed on May 6, 2004 and the references cited have been carefully reviewed and considered. Claims 1-16 were presented for examination. Applicant has cancelled claims 1-16 without prejudice in favor of a continuing, reissue, or re-examination application. New claims 17-34 are now presented for further examination.

In brief, the present claimed invention is directed to an protective enclosure for a separate touch screen device having a touch screen. The protective enclosure has a substantially crush-resistant shell that provides an elevated protective rim that protects the touch screen from breakage. The protective enclosure has grip-enhancing structures that allow the protective enclosure to be securely held by hand in slippery conditions. The protective enclosure includes cushioning that protects the touch screen device from mechanical shock. The protective enclosure has a flexible protective membrane that is integrally fixed to a shell of the protective enclosure. The flexible protective membrane is disposed over the touch screen and has a smooth service on the backside that is disposed over and adjacent to the touch screen so that tactile inputs on the front side of the flexible protective membrane are communicated through the membrane to the touch screen. The touch screen is at least partially transparent in portions to allow the user to view at least portions of the touch screen. Recessed areas may be provided in the flexible protective membrane that align with the areas of tactile input to the touch screen. The recessed area has a perimeter edge that provides tactile feedback. The recessed areas are sufficiently thin to allow tactile inputs to be transmitted through the flexible protective membrane to the touch screen. The flexible protective membrane may have textures, colors, and printing corresponding to predetermined areas of the touch screen device.

Objections to the claims

Original claims 11-15 were objected to as being in improper dependent form. Applicant has cancelled claims 11-15, thus rendering the objections to these claims moot.

Rejection under 35 U.S.C. § 102

Claims 1-3, 7, 8-10 and 16 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,415,138 to Sirola et al. (hereinafter “Sirola”). These claims have been cancelled, thus rendering this rejection moot.

Sirola discloses a wireless communication device and a method of manufacturing a wireless communication device. The wireless communication device (1) includes a housing (2), a touch sensitive display (3), and a cover part (4). The cover part includes a transparent and flexible activation means (5).

Applicant’s claimed invention clearly distinguishes from Sirola. For example, claim 17 recites “a shell that is capable of enclosing said touch screen device, said touch screen device being a separate unit from said protective enclosure, said touch screen device being insertable in and removable from said enclosure by hand”.

Sirola discloses an activation means that attaches to a frame that connects by a hinge to a housing that is an integral part of the wireless communication device. Sirola does not disclose, teach, or suggest that the device housing is an easily removable protective shell that encloses a separate touch screen device which allows the user to put the touch screen device into the protective enclosure or remove the touch screen device from the protective enclosure by hand. The protective enclosure of claim 17 encloses, i.e., completely surrounds, a separate touch screen device that has a touch screen.

Claim 17 further recites “said shell being substantially crush-resistant and providing an elevated protective rim around a perimeter of said touch screen so that when said touch screen device is disposed in said enclosure, said touch screen of said touch screen device is recessed with respect to said protective rim of said shell so that said elevated protective rim protects said touch screen of said touch screen device from breakage”.

Sirola does not disclose, teach or suggest a crush-resistant shell that encloses a touch screen device, nor an elevated protective rim around a perimeter portion of the touch screen that protects the touch screen from breakage. Because there is no crush resistant shell and no elevated protective rim in Sirola, if a heavy object were placed on

top of the Sirola device cover, the force of the heavy object would be transmitted to the touch screen, potentially causing the touch screen to break.

Likewise, Sirola does not disclose a watertight enclosure as set forth in claim 18. Sirola does not disclose, teach or suggest that the “activation means” that is attached to the device housing with a hinge (6), can in any way be adapted to be watertight. Likewise, Sirola does not disclose a membrane that is watertight and at the same time “is sufficiently thin to transmit smooth strokes from a stylus to said touch screen without interruption of said strokes, said flexible protective membrane being sufficiently smooth and sufficiently firm to prevent said stylus from catching on said membrane” as set forth in claim 19. Even if the activation means, i.e. cover, of Sirola were sufficiently thin, smooth and firm to transmit smooth strokes from a stylus to a touch screen, it could not operate properly in a wet environment.

Claim 21 further recites “cushioning that protect the touch screen device from mechanical shock. There is no disclosure, suggestion, or teaching in Sirola of structures that protect the touch screen device from mechanical shock.

Sirola does not disclose grip-enhancing structures as set forth in claim 20, or recessed areas in the membrane as set forth in claim 22. These claimed features are particularly useful in environments that require “watertight, chemically resistant” (page 6, lines 10-24) protective covers as taught by Applicant. For example, in a wet or otherwise slippery environment, the grip-enhancing structures allow a user to securely hold the device. Likewise the recessed areas guide a user’s finger or stylus from slipping and inadvertently depressing an unintended area. Further, for a firefighter with gloved hands (page 1 line 28) or maintenance mechanic using the enclosure (page 6 line 16), in conjunction with other protective gear such as gloves, the recessed areas guide the user to specific areas on the touch screen and minimize the likelihood that the user will inadvertently depress two areas simultaneously or inadvertently press the wrong area.

Sirola clearly does not disclose or teach, in any manner, the use of recessed areas, as set forth in claim 22 and, in particular, Sirola does not disclose recessed areas on the front side of the flexible protective membrane. Further, there is no teaching of a perimeter edge that provides tactile feedback in Sirola. The perimeter edge provides

tactile feedback that guides the user's finger or a stylus to specific areas of the screen and permits the user to more easily deflect the membrane.

Applicants' claim 17 further recites "said flexible protective membrane being at least partially transparent such that said touch screen of said touch screen device is visible through said flexible protective membrane." There is no disclosure in Sirola of a protective membrane that is at least partially transparent.

The use of snaps to close the enclosure, that allows the touch screen device to be inserted into or removed from the protective enclosure by hand, as set forth in claim 17 and dependent claim 23 is not disclosed in Sirola.

Further, the use of distinct textures as set forth in claim 24, the use of printed areas as set forth in claim 25 and the use of colors is set forth in claim 26, are not shown or suggested by Sirola. For these reasons, independent claim 17 clearly distinguishes over Sirola as well as dependent claims 18-26.

Claims 27-34 include similar limitations which distinguish for the same reasons as set forth above.

Rejections under 35 U.S.C. § 103

Claims 4-6 were rejected as being unpatentable over Sirola in view of U.S. Patent No. 6,471,056 to Tzeng. Claims 4-6 have been cancelled without prejudice thus rendering this rejection moot.

Tzeng discloses a portable electronic device protective cover having a shape corresponding to an electronic device to be protected.

Tzeng does not make up for the deficiencies of Sirola. Tzeng fails to disclose a protective enclosure that protects a device from harsh environmental conditions or a protective enclosure that is substantially crush-resistant enclosure as in claim 17 or watertight as set forth in claim 18.

Tzeng does not disclose, teach or suggest a shell that has an elevated protective rim around a perimeter portion of the touch screen as set forth in claim 17.

Tzeng does not disclose, teach or even suggest grip-enhancing structures that enable the protective enclosure to be securely held by hand in slippery conditions as set forth in claim 20. Likewise, Tzeng fails to disclose “structures that protect the touch screen device from mechanical shock as claimed by the applicant in claim 21.

Tzeng fails to disclose a protective membrane that has recessed areas that provide tactile feedback as set forth in claim 22.

Tzeng does not disclose the use of snaps to close the protective enclosure as set forth in claim 23.

Applicant’s claimed membrane, when formed using thermoforming, as set forth in claim 33, has unobvious beneficial differences from the references due to the process of thermoforming. Specific advantages of thermoforming include the ability to produce thin-walled parts such as required for detailed/precise recessed areas, and the ability to form large parts (48" x 96"), extensive choice of patterns, finishes and textures. None of these unobvious differences are disclosed, taught, or suggested in either Sirola or Tzeng.

Hence, even assuming arguendo, that the references could be combined, such a combination still fails to teach the novel and unique aspects of Applicant’s claimed invention since the combination of these two references does not disclose the limitations of Applicant’s claims 17-34.

Claims 11 and 12 were rejected as being unpatentable over Sirola in view of U.S. Patent No. 6,094,785 to Montgomery et al (hereinafter “Montgomery”).

Montgomery relates to a snap arrangement comprising snap hooks (208) associated with a first housing (200) that snap over corresponding protrusions (111) in a second housing (100). The snap retention devices disclosed in Montgomery et al are an integral part of a device housing and are specifically designed to be attached and detached only with the use of special tools. Montgomery does not disclose a shell that is capable of enclosing a touch screen device, the touch screen device being a separate unit from the protective enclosure, and the touch screen device being insertable in and removable from the enclosure by hand.

The Applicant’s invention clearly distinguishes from the art of record. Claim 17 recites “a shell that is capable of enclosing said touch screen device, said touch screen

device being a separate unit from said protective enclosure, said touch screen device being insertable in and removable from said enclosure by hand”. Dependent claim 23 which recites “wherein said protective enclosure uses at least one snap to securely close said enclosure around said separate touch screen device” also includes the limitation of claim 17 which are not disclosed by Montgomery.

Even if the snap retention devices of Montgomery could be combined with the activation means of Sirola, the combination would still not provide the protective functions and ability to remove the touch screen device by hand as recited in the Applicant’s claims.

As discussed above with respect to the combination of Sirola with Tzeng, the reference of Sirola and Montgomery taken together, still fail to disclose the limitations of Applicant’s independent claims 17 and 27, and hence fail to disclose the limitations of the claims which depend from them. Further, neither Sirola nor Montgomery et al disclose the limitations of dependent claims 18-26, and 28-34.

U.S. Patent 6,665,174 to Derr et al. (hereinafter “Derr”) was not relied upon but made of record by the Examiner in the First Office Action. Derr discloses a portable electrical control and display device having a single piece housing made of temperature resistant, watertight material.

Applicant’s invention clearly distinguishes from Derr. Derr does not disclose a protective enclosure for a touch screen device as set forth in claim 17. Derr fails to disclose a protective enclosure having a shell that is crush-resistant and has an elevated protective rim the touch screen that protects the touch screen from breakage as set forth in claim 17.

Likewise, Derr does not disclose, teach or even suggest a flexible protective membrane that is sufficiently thin to transmit smooth strokes from a stylus to a touch screen without interruption of said strokes. Nor does Derr disclose a flexible protective membrane that is sufficiently smooth and sufficiently firm to prevent said stylus from catching on the membrane.

Derr does not disclose a shell that includes grip-enhancing structures that enable the protective enclosure to be securely held by hand in slippery conditions. Likewise,

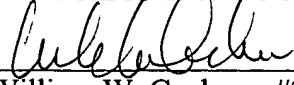
Derr does not disclose, teach, or suggest recessed areas in the protective membrane that provide tactile feedback.

For all of these reasons, the above-identified application, as amended, is now considered to be in condition for allowance, and such action is earnestly solicited.

Respectfully submitted this 22nd day of July 2004.

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